

### ABSTRACT

A digital timing synchronizer of a receiver is provided for timing synchronization to a transmitter in a wireless communication system, wherein the received signal has a timing error with respect to a reference code. A channel estimator estimates an initial code phase of the received signal. A code generator generates a timing reference code that is adjustable by integer increments. An interpolation feedback circuit is configured for interpolation and correction of the timing error, whereby the interpolation is achieved through an integer code shift, plus a quantized fractional adjustment selected from a look-up table of quantized fractional adjustment values and their associated predetermined interpolator coefficients, from which a time corrected version of the received signal is produced.